

REMARKS

The present invention is a method for gas stunning of animals for slaughter arriving at a slaughter house in transport crates. In accordance with the embodiment of the invention, the method includes gas stunning of animals being achieved while the animals are still in transport crates 6 and where the transport crates and animals are conveyed successively by means of conveyors 18 through a stunning chamber 10 wherein an influence of the gas for stunning the animals is adjusted while the animals are within the stunning gas by shortening or lengthening a conveying time and adjusting a conveying route of the transport crates through the stunning chamber. In accordance with the invention, the stunning chamber is divided into a number of horizontal zones, such as 3, where the gas concentration is different and successively higher in the lower zones as described in paragraph [0022] of the Substitute Specification. Adjustment of the conveying route in combination with the speed of the conveyor while the animals are in the stunning gas is used to provide optimum stunning of the animals as described in paragraph [0025] - [0029].

The Abstract has been amended as requested by the Examiner.

Claims 8-11 stand rejected under 35 U.S.C. §102 as being anticipated by United States Patent 5,487,699 (Tyrrell et al). In the Response to Arguments regarding claim 8, the Examiner states as follows:

Regarding claim 8, the Tyrell et al. reference does disclose adjusting the influence of a gas on the stunning animals by shortening or lengthening the conveying time of the animals in the stunning chamber as seen in figure 1 and column 3 lines 35-67 and column 4 lines 1-33, where the speed of the conveyor is variable and thus the length of time the stunning animal spends in the stunning chamber is adjusted to vary the amount of time the stunning animal is under the influence of the stunning gas in the stunning chamber. Further, the

Tyrell et al. reference discloses adjusting the conveying path of the stunning animals through the stunning chamber and the stunning gas as seen in figure 1 and column 3 lines 35-67 and column 4 lines 1-33, where the stunning animals are conveyed in a vertical path in the gas portion of the chamber - at 10, via the conveyor - at 23, and then are conveyed in a horizontal path - at 24-28 in the gas of the chamber - at 10, and are then conveyed in a vertical path - at 32 in the gas of the chamber - at 10. Therefore, the change from a vertical path to a horizontal path and back to the vertical path in the gas of the stunning chamber causes the path of the stunning animals to be adjusted and varied. Further, as seen in figure 6 of Tyrell et al. the conveyor - at 42 is inclined with respect to the other conveyors - at 24-32 within the stunning chamber and therefore the path of the inclined conveyor allows for the path of the stunning animals in the stunning chamber to be adjusted into differing positions within the stunning chamber.

These grounds of rejection are traversed for the following reasons.

The Examiner's construction of Tyrell et al, as reproduced above in the Response to Arguments, as anticipating claim 8 is erroneous for two reasons. Claim 8 recites a method for gas stunning of animals involving the simultaneous conditions of "the animals are conveyed successively by means of conveyors through a stunning chamber, wherein an influence of the gas for stunning the animals is adjusted while the animals are within the stunning gas by shortening or lengthening a conveying time and adjusting a conveying route within the stunning gas of the transport crates through the stunning chamber. As may be seen from Tyrell et al, the stunning gas is depicted for example in Figs. 1, 3, 4 and 6 as a stippled lower region. The infeed of crates identified, for example in Fig. 1 by an arrow pointing to the right and the outfeed of crates as also identified for example in Fig. 1 by arrows pointing to the right, is not within the stunning gas as claimed and therefore, is not relevant to the claimed subject matter. As may be seen from the drawings of Tyrell et al, there is a single path through the stunning gas which is not adjusted and further, the conveying route is fixed and of constant length. Moreover,

column 3, lines 47-60, describes the movement of the crates within the stunning gas in the horizontal direction as being "driven continuously" which does not suggest either a shortening or lengthening of conveying time or adjusting a conveying route within the stunning gas.

Claim 9 further limits claim 8 in reciting that the shortening or lengthening of the conveying time through the stunning chamber is achieved by increasing or reducing a speed of the conveyors. It is noted that the Examiner again refers to column 3, lines 35-67, through column 4, lines 1-33. However, as pointed out above, column 3, line 52, refers to the horizontal movement of the crates through the stunning gas as being "driven continuously" which it is submitted that a person of ordinary skill in the art would not consider to suggest an increasing or reducing in speed of the conveyor to provide a shortening or a lengthening of the conveying time through the stunning chamber within the stunning gas as recited in claim 8.

Claims 10 and 11 further limit claims 8 and 9 in reciting that the adjustment of the conveying route through the stunning chamber is achieved by lowering or lifting a substantially horizontal conveyor running therein which conveyor provides for the conveying of the transport crates through the stunning chamber within the stunning gas between a downwards running conveyor and an upwards running conveyor. It is noted that the Examiner makes reference to the horizontal conveyor 24, the downwards running conveyor 23 and 26 and the upwards running conveyor 31 and 32. However, all of those conveyors are clearly not within the stunning gas which is, as pointed out above, is identified by the stippled region in the bottom of the chamber wherein a fixed path of continuous horizontal motion occurs which does not meet the subject matter of the claims.

In summary, claims 8-11 are not anticipated by Tyrrell et al. If the Examiner persists in the stated grounds of rejection, it is requested that he point out on the record where the foregoing differences, namely while within the stunning gas, a shortening or lengthening of a conveying time and an adjusting of the conveying route occurs with the shortening or lengthening of the conveying time being achieved, an increasing or reducing a speed of the conveyors as recited in claim 9 and an adjustment of the conveying route as recited in claims 10 and 11 by lowering or lifting a substantially horizontal conveyor routing therein which conveyor provides for conveying of the transport crates through the stunning chamber within the stunning gas between a downwards running conveyor and an upwards running conveyor. It is clearly seen that there is only a single conveyor in Tyrrell et al with there being no counterpart of the above subject matter.

Claims 12-15 stand rejected under 35 U.S.C. §103 as being unpatentable over Tyrrell et al further in view of WO 94/27425 (Jull et al). These grounds of rejection are traversed for the following reasons.

Claims 12-15 further limit claims 8-11 in reciting that an influence of the gas for stunning the animals is adjusted by varying gas concentration at varying levels in the stunning chamber with an increasing gas concentration being applied in the downwards direction in the stunning chamber. This subject matter in combination with the subject matter of claims 8-11 provides for an effective mechanism to control the stunning mechanisms for the animals.

In the first place, Jull et al do not cure the deficiencies noted above with respect to Tyrrell et al.

While Jull et al do disclose a stunning chamber in which there is an air stunning gas interface 134, as shown in Fig. 6, such teaching does not meet or render obvious the subject matter of claims 12-15 which require adjustment of gas concentration at varying levels. All that Jull et al discloses is that there is an air interface in the stunning chamber and that heavier than air gas accumulates in the bottom of the chamber as illustrated in Fig. 6. However, this does not constitute the claimed adjusting by varying gas concentration at varying levels as recited in the claims.

Accordingly, even if the proposed modification of Jull et al were made, the deficiencies of Tyrrell et al would not be cured and furthermore, an adjustment of gas concentration at varying levels, would not be achieved. Accordingly, the subject matter of claims 12-15 is not obvious over the combination of Tyrrell et al and Jull et al.

Claims 16-23 stand rejected under 35 U.S.C. §102 as being unpatentable over Tyrrell et al in view of Jull et al. These grounds of rejection are traversed for the following reasons.

Claims 16-23 further limit claims 8-15 in reciting a system of gas stunning of animals according to claims 8-15 comprising a substantially horizontal conveyor which receives and introduces transport crates and the animals for slaughter into a gas-filled stunning chamber in which a downwards running conveyor is arranged, for successively conveying transport crates downwards in the stunning chamber, and an upwards running conveyor which is arranged for successively conveying the transport crates upwards out of the stunning chamber, wherein the downwards running conveyor comprises substantially vertical conveyors, each comprising

mutually interacting endless chain conveyors which support opposite sides of the transport crates for downwards conveying of the transport crates in the stunning chamber, the upwards running conveyor comprises a substantially vertical conveyor comprising mutually interacting endless chain conveyors which support opposite sides of the transport crates for upwards conveying from the stunning chamber, and between the downwards and upwards running conveyors there is a substantially horizontal conveyor which provides horizontal conveying of the transport crates through the stunning chamber, which horizontal conveyor furthermore is lifted and lowered respectively between levels with varying gas concentrations in the stunning chamber. It is noted that in the discussion of the rejection of claims 16-23, the Examiner is only relying upon the structure of Tyrell et al which, as submitted above, is deficient regarding the claimed operation of stunning animals within a stunning gas by shortening or lengthening a conveying time and adjusting a conveying route within the stunning gas of the transport crates. It is submitted that a person of ordinary skill in the art would not consider the proposed combination of Tyrell et al and Jull et al for performing the method of claims 8-15 to be obvious in view of the conveying structure as disclosed by Tyrell et al. Accordingly, the subject matter of claims 16-23 is not obvious.

Claims 24-31 stand rejected under 35 U.S.C. §103 as being unpatentable over Tyrell et al as modified by Jull et al further in view of United States Patent 5,788,564 (Chamberlain). These grounds of rejection are traversed for the following reasons.

Claims 24-31 further limit claims 16-23 in reciting the system comprising a lower zone having a gas concentration of the gas for stunning approximately a

45-51% common intermediate zone having a gas concentration approximately of 32-46% and an upper zone having a gas concentration of 8-10% wherein sensors are provided for monitoring and control respectively the gas concentration in the zones. These grounds of rejection are traversed for the following reasons.

In the first place, Chamberlain does not cure the deficiencies noted above with respect to Tyrell et al and Jull et al.

Moreover, the Examiner recognizes the gas concentration as recited in the claims is not taught by Chamberlain. The Examiner dismisses the claim limitations by stating that "therefore, the gas concentration levels are not a critical part of the invention". The Examiner refers to paragraph [0015] as suggesting that the claimed concentrations are not important. However, in the first place, Applicants' teaching in paragraph [0015] is with regard to "the stunning result". However, the preceding paragraph in Applicants' disclosure sets forth the preferred gas concentrations to produce the stunning result which are the subject matter of claims 24-31. The Examiner has not demonstrated on the record why the claimed concentrations are obvious in view of Chamberlain since Chamberlain has been cited as disclosing sensors for providing monitoring and control of gas concentration in the zones as referred in column 3, lines 18-40. However, the disclosure therein does not render obvious the claimed ranges of gas concentration of claims 24-31.

Claims 32-40 stand rejected under 35 U.S.C. §103 as being unpatentable over Tyrell et al as modified by Jull et al further in view of United States Patent 5,902,177 (Tessier et al). These grounds of rejection are traversed for the following reasons.

Claims 32-40 further limit claims 16-23 in reciting a PLC system control controls mutually dependent mechanical parameters of a speed of vertical conveyors, a number of transport crates in the stunning zones, a cycle of the crates in the stunning zone, a number of animals per crate, a speed of a slaughtering line and a speed cycle between crates in the stunning zone. This subject matter is not rendered obvious by Tessier et al.

In the first place, Tessier et al do not cure the deficiencies noted above with respect to Tyrrell et al.

Furthermore, Tessier et al discloses an apparatus and method for removing ribs. It is submitted that Tyrrell et al, Jull et al and Tessier et al if combined by the Examiner would not yield the subject matter of claims 32-40. It is submitted that a person of ordinary skill in the art would not consider Tessier et al's disclosure of a PLC to render obvious the claimed subject matter involving a PLC in claims 32-40. Moreover, Tyrrell et al and Jull et al do not suggest the claimed control of the mutually dependent mechanical parameters as recited in the claims. The only way a person of ordinary skill in the art would arrive at the subject matter of claims 32-40 is by impermissible hindsight.

In view of the foregoing amendments and remarks, it is submitted that each of the claims in the application is in condition for allowance. Accordingly, early allowance thereof is respectfully requested.

To the extent necessary, Applicants petition for an extension of time under 37 C.F.R. §1.136. Please charge any shortage in fees due in connection with the

filing of this paper, including extension of time fees, to Deposit Account No. 01-2135 (900.43156X00) and please credit any excess fees to such Deposit Account.

Respectfully submitted,

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A handwritten signature in black ink, appearing to read "Donald E. Stout", is written over a horizontal line.

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Attachments

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